

What Is Claimed Is:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 80%, 85%, 90%, or 95% identical to a sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a TNFR polypeptide having the complete amino acid sequence in SEQ ID NO:2 or 4 or as encoded by a cDNA clone contained in ATCC Deposit No. 97810 or 97809;

(b) a nucleotide sequence encoding a mature TNFR polypeptide having an amino acid sequence at positions 31-300 or 31-170 in SEQ ID NO:2 or 4, respectively, or as encoded by the cDNA clone contained in the ATCC Deposit No. 97810 or 97809;

(c) a nucleotide sequence encoding the soluble extracellular domain of a TNFR polypeptide having the amino acid sequence at positions 31-283 or 31-166 of SEQ ID NOS:2 and 4, respectively; and

(d) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b) or (c) above.

2. The nucleic acid molecule of claim 1 wherein said polynucleotide has a complete nucleotide sequence selected from the group consisting of SEQ ID NO:1 and SEQ ID NO:3.

3. The nucleic acid molecule of claim 1 wherein said polynucleotide has a nucleotide sequence which encodes a TNFR polypeptide having a complete amino acid sequence selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4.

4. The nucleic acid molecule of claim 1 wherein said polynucleotide has a nucleotide sequence encoding the mature form of a TNFR polypeptide having an amino acid sequence from about 31 to about 300 in SEQ ID NO:2 or from about 31 to about 170 in SEQ ID NO:4.

5. The nucleic acid molecule of claim 1 wherein said polynucleotide has a nucleotide sequence encoding the soluble extracellular domain of a TNFR polypeptide having the amino acid sequence from about 31 to about 283 in SEQ ID NO:2 or from about 31 to about 166 of SEQ ID NO:4.

6. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 80%, 85%, 90%, or 95% identical to a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of residues m-300 of SEQ ID NO:2, where n is an integer in the range of 1-49;
- (b) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of residues n-170 of SEQ ID NO:4, where n is an integer in the range of 1-49;
- (c) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of residues 1-y of SEQ ID NO:2, where y is an integer in the range of 193-300;
- (d) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of residues 1-z of SEQ ID NO:4, where z is an integer in the range of 132-170; and
- (e) a nucleotide sequence encoding a polypeptide having the amino acid sequence consisting of residues m-y of SEQ ID NO:2 or n-z of SEQ ID NO:4 as m, n, y and z are defined in (a), (b), (c) and (d), above.

7. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 80%, 85%, 90%, or 95% identical to a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide consisting of a portion of a complete TNFR amino acid sequence encoded by a cDNA clone contained in ATCC Deposit No. 97810 or 97809 wherein said portion excludes from 1 to about 48 amino acids from the amino terminus of said complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97810 and 97809;
- (b) a nucleotide sequence encoding a polypeptide consisting of a portion of a complete TNFR amino acid sequence encoded by a cDNA clone contained in ATCC Deposit No. 97810 or 97809 wherein said portion excludes from 1 to about 107 and from 1 to about

38 amino acids from the carboxy terminus of said complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97810 and 97809, respectively; and

(c) a nucleotide sequence encoding a polypeptide consisting of a portion of a complete TNFR amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97810 or 97809, wherein said portion includes a combination of any of the amino terminal and carboxy terminal deletions for the respective clones in (a) and (b), above.

8. The nucleic acid molecule of claim 1 wherein said polynucleotide has the complete nucleotide sequence of the cDNA clone contained in ATCC Deposit No. 97810 or 97809.

9. The nucleic acid molecule of claim 1 wherein said polynucleotide has the nucleotide sequence encoding a TNFR polypeptide having the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97810 or 97809.

10. The nucleic acid molecule of claim 1 wherein said polynucleotide has the nucleotide sequence encoding a mature TNFR polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97810 or 97809.

11. An isolated nucleic acid molecule comprising a polynucleotide which hybridizes under stringent hybridization conditions to a polynucleotide having a nucleotide sequence identical to a nucleotide sequence in (a), (b), (c) or (d) of claim 1 wherein said polynucleotide which hybridizes does not hybridize under stringent hybridization conditions to a polynucleotide having a nucleotide sequence consisting of only A residues or of only T residues.

12. An isolated nucleic acid molecule comprising a polynucleotide which encodes the amino acid sequence of an epitope-bearing portion of a TNFR polypeptide having an amino acid sequence in (a), (b), (c) or (d) of claim 1.

13. The isolated nucleic acid molecule of claim 12, which encodes an epitope-bearing portion of a TNFR polypeptide comprising amino acid residues selected from the group consisting of: from about Ala-31 to about Thr-46 in SEQ ID NO:2, from about Phe-57 to about Thr-117 in SEQ ID NO:2, from about Cys-132 to about Thr-175 in SEQ ID NO:2, from about Gly-185 to about Thr-194 in SEQ ID NO:2, from about Val-205 to about Asp-217 in SEQ ID NO:2, from about Pro-239 to about Leu-264 in SEQ ID NO:2, and from about Ala-283 to about Pro-298 in SEQ ID NO:2, from about Ala-31 to about Thr-46 in SEQ ID NO:4, from about Phe-57 to about Gln-80 in SEQ ID NO:4, from about Glu-86 to about His-106 in SEQ ID NO:4, from about Thr-108 to about Phe-119 in SEQ ID NO:4, from about His-129 to about Val-138 in SEQ ID NO:4, and from about Gly-142 to about Pro-166 in SEQ ID NO:4.

14. A method for making a recombinant vector comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

15. A recombinant vector produced by the method of claim 14.

16. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 15 into a host cell.

17. A recombinant host cell produced by the method of claim 16.

18. A recombinant method for producing a TNFR polypeptide, comprising culturing the recombinant host cell of claim 17 under conditions such that said polypeptide is expressed and recovering said polypeptide.

19. An isolated TNFR polypeptide comprising an amino acid sequence at least 80%, 85%, 90%, or 95% identical to a sequence selected from the group consisting of:

(a) the amino acid sequence of a full-length TNFR polypeptide having the complete amino acid sequence shown in SEQ ID NO:2 or 4, or as encoded by a cDNA clone contained in ATCC Deposit No. 97810 or 97809;

(b) the amino acid sequence of a mature TNFR polypeptide having the amino acid sequence at positions 31-300 in SEQ ID NO:2 or 31-170 in SEQ ID NO:4, or as encoded by a cDNA clone contained in ATCC Deposit No. 97810 or 97809; or

(c) the amino acid sequence of a soluble extracellular domain of a TNFR polypeptide having the amino acid sequence at positions 31 to 283 in SEQ ID NO:2 or 31 to 166 in SEQ ID NO:4, or as encoded by the cDNA clone contained in ATCC Deposit No. 97810 or 97809.

20. An isolated polypeptide comprising an epitope-bearing portion of the TNFR protein, wherein said portion is selected from the group consisting of a polypeptide comprising amino acid residues: from about Ala-31 to about Thr-46 in SEQ ID NO:2, from about Phe-57 to about Thr-117 in SEQ ID NO:2, from about Cys-132 to about Thr-175 in SEQ ID NO:2, from about Gly-185 to about Thr-194 in SEQ ID NO:2, from about Val-205 to about Asp-217 in SEQ ID NO:2, from about Pro-239 to about Leu-264 in SEQ ID NO:2, and from about Ala-283 to about Pro-298 in SEQ ID NO:2, from about Ala-31 to about Thr-46 in SEQ ID NO:4, from about Phe-57 to about Gln-80 in SEQ ID NO:4, from about Glu-86 to about His-106 in SEQ ID NO:4, from about Thr-108 to about Phe-119 in SEQ ID NO:4, from about His-129 to about Val-138 in SEQ ID NO:4, and from about Gly-142 to about Pro-166 in SEQ ID NO:4.

21. An isolated antibody that binds specifically to a TNFR polypeptide of claim 19.

22. A method of treating a patient in need of TNFR polypeptide activity comprising administering to the patient the TNFR polypeptide of claim 19.

23. A method of treating a patient in need of TNFR polypeptide activity comprising administering to the patient a nucleic acid of claim 1.

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